

December 16, 2007 Land O' Lakes Tornado Damage Survey

Written By:

Anthony Reynes, Daniel Noah - NWS Tampa Bay

The event began around 5:00 am EST as a couple of strong thunderstorms moved from the coastal waters into western Pasco county. The northernmost cell was showing clear signs of low level rotation with a hook echo signature clearly visible on the 5:30 am EST base velocity and reflectivity (not shown) radar images from the National Weather Service Doppler Radar in Ruskin, Florida.

Figure 2 shows the map with the general area and estimated path of the tornado, depicted by a blue arrow, whose main target was the Pasco County Jail near Land O' Lakes, Fl.

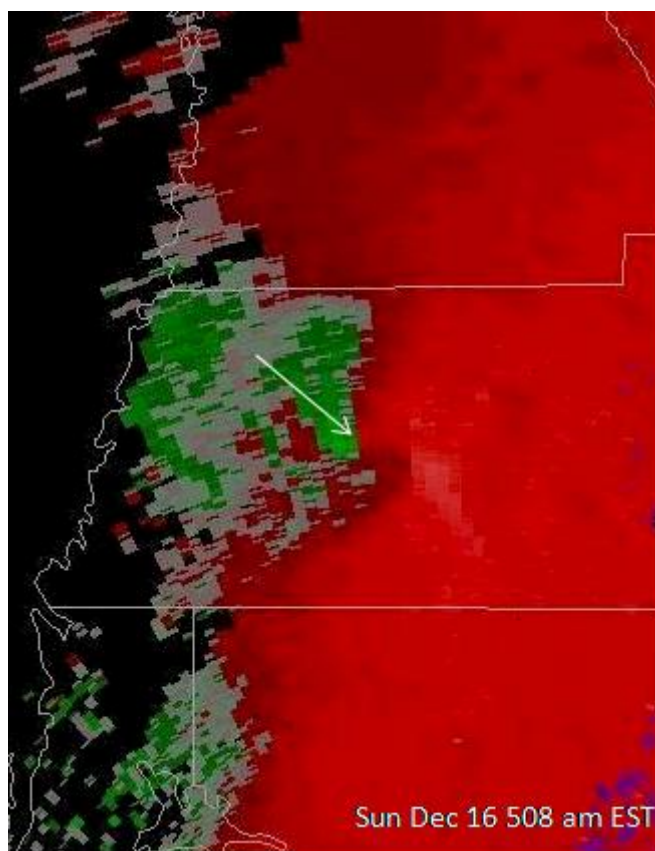


Figure 1. Base Velocity from NWSTBW Radar at 5:05 am EST showing a well defined rotation couplet at 0.5 degrees of elevation.

At around 5:20 am EST, the initial touchdown (Site A) was estimated to be at the intersection of US 41 and Central Boulevard. A County Fire Station is located near that intersection and suffered minor roof damage. Several large trees were either uprooted or split near their base. From the Fire House, the trail of damage could be seen in the direction of the Jailhouse Main Building at the end of Central Boulevard. Site B indicates the location of several gardening facilities where a hydroponic garden structure and large storage shed were destroyed. The lack of damage suggests that the tornado lifted momentarily, then made another brief touchdown over the Jail's main building (Site C).

The storm kept moving in a southwest-to-northeast direction, confirmed by the damage observed over State Road 52 around 3 miles east of the intersection with US 41 (Site D).

The length of the tornado path was about 3.2 miles long from Site A to Site D (Figure 2). As mentioned before, there is compelling evidence that the tornado may have temporarily lifted between Sites and did not remain on the ground along

the entire path.



Figure 2. General map showing impacted area and estimated tornado path.

Location	Pasco County Jailhouse, 3.3 miles north of Land O' Lakes, Florida.
Event	Tornado
EF-Scale / Estimated winds	EF-1 / 100 mph
Track	3.2 miles bearing NE
Width	Estimated at 100 yards
Fatalities / Injuries	None / None
Damages	Estimated at \$500,000 (through Dec 17 2007)

Table 1. Summary.

Intensity

The path of damage (Figures 3 through 7) began with two large trees in front of the Fire House. An adjacent football field was also damaged by the winds. Half a mile down the road, the tornado struck gardening facilities and a pig farm. A hydroponic garden structure was destroyed, along with a large storage shed. A large field of scattered debris was found.

At the Jailhouse main building, there was damage to the front parking lot facility. This damage included downed traffic signs and uprooted trees. There was also a service pickup truck observed to be overturned and leaning against a power pole (Figure 6). Also at the main building, the most significant damage was found on the roof where several industrial air conditioning units were moved from their foundations. Each unit weighs approximately 7000 lbs and rested on an iron base. Three units were partially or completely destroyed (Figure 5). The most heavily impacted area was a temporary facility in back of the main building. It was completely destroyed (Figure 6). Another large vehicle was turned sideways (not shown). At the end of the estimated path of the tornado, on State Road 52, a line of power poles was damaged. Many broke in half or were twisted until reaching the ground (Figure 7). The preliminary conclusion is that this was a solid EF-1 with winds of 100 mph.

Bearing and Track Length

From the survey data, it was possible to identify a narrow path of destruction associated with a tornado. A map overlay defined a southwest-to-northeast moving tornado which tracked for about 3.2 miles. A bearing of around 62 degrees

began at the intersection of US 41 and Central Boulevard, and ended over State Road 52 about 3 miles east (Figure 2). The initial touchdown was computed to be 5:20 am EST. It progressed along the indicated track for about 7 minutes, with no evidence of damage beyond Site D, east of State Road 52.

Width of the Funnel

A detailed visual inspection of the row of power poles damaged near State Road 52 suggested a tornado width of around 80 to 100 yards. This information was later compared with the damage to the roof of the Jailhouse's Main Building. The overall length of the roof is slightly over 100 yards. Picture comparisons revealed that air conditioning units on opposite sides of the roof were pushed inwards, and towards the center of the roof. This important finding, coupled with the fact that the original spacing between the opposing units was nearly 100 yards substantiates the findings near State Road 52. The preliminary conclusion is that the tornado was 100 yards wide.







Figure 3. Site A damage (beginning of Central Blvd Rd and Fire House Station).









Figure 4. Site B damage (Gardening & farm facilities).





Figure 5. Site C damage (Jailhouse air conditioning roof units).





Figure 6. Site C damage (Jailhouse parking lot and rear field).



Figure 7. Site D damage (State Road 52).

Images























































